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Motion Sensing

Alvin Gold tunes in to Martin Logan's latest affordable electrostatic hybrid loudspeaker, the ElectroMotion...

There are only two really important brands of electrostatic loudspeakers, and MartinLogan is the other one. Many years ago, when MartinLogan was a fledgling, the company was hamstrung by talented but sometimes flakey drive units, and by hybrid moving coil bass drivers that didn't match the aspirations of the electrostatic mid and treble drivers. In the end, the solution was not to get rid of the moving coil bass drivers, but simply to do them better. In fact MartinLogan has been on a trajectory of increasing refinement with all their drivers, and also with the physical structure of their speakers which look and work better than ever.

The first model in recent times that really set a high standard was the Summit, which also set a new standard for affordability and stereo imagery at the time. The more expensive models now integrate much better than before, and handle the crossover region between bass and mid/top with greater aplomb. Over the last few years new models have been introduced at progressively lower price levels, and the ElectroMotion, reviewed here, which is a completely new model, is a remarkably fine newcomer that takes the formula one step further. It is by any standards an unusually

cost-effective design, and it is also beautifully packaged and presented.

Like earlier models in the MartinLogan range, it is tall, slender, and sports a slimline electrostatic panel that tilts gently backwards. The panel (which covers everything north of 500Hz) takes up the top two thirds of the speaker, and is radiused to control imagery. In common with all MartinLogans in recent times, the bass section houses an 8 inch bass driver mounted in a heavy bottom vented section of the enclosure. As with all electrostatics, the electrostatic panel needs a polarising voltage and it is supplied by a high voltage circuit that shares space with the bass driver and crossover.

The crossover still makes an appearance of course; the bass section hands over to the electrostatic panel at 500Hz. The power supply is a diminutive unit with a two-pin mains plug attached along with a length of slender cable to carry the voltage to a suitable input on the back of the speaker. The supply is about the same size as a phone charger.

The speaker inputs are in the form of elegantly designed press buttons, which open up wide enough to accept 4mm plugs and which clamp the input plugs with some force when released. The speakers are also supplied with four rubberised feet, whose rubber



function. For example there was time when the frame around the electrostatic panels lacked rigidity, with the result that on listening closely, structural resonances and colourations were audible. This despite the fact that people who should know better always claimed that they were colouration-free because there was no enclosure.

"it's hard not like a loudspeaker such as this – the things it does well, it does brilliantly..."

Wrong on both counts! The enclosure – or frame in this instance – is made from a combination of aluminium and unspecified composites.

In fact there is more to the enclosure than this. First, as you will have noticed, the panel is very slender side to side – I think narrow is the technical word – but it is quite sharply curved in the horizontal plane. The panel is 35 inches tall, and the fact that it is tilted slightly back means that floor reflections are partly suppressed. The 'curvilinear XStat design' is a fancy way of describing the horizontal curvature. The panel radiating means that the centre line of the panel bulges out towards the listening seat, and the speaker produces a wider spread of sound in front of the speaker than behind, where the sound is focused into a relatively narrow beam.

Damping the rear radiation can be achieved using drapes or furniture near the rear wall, and because the spread of sound is restricted it is easily damped in the same way if required. Similar observations apply to the sides. As long as the speakers are a foot or so clear of side walls, reflections which would muddle imagery are limited. These comments apply to the electrostatic panel, and not the bass, whose output is not as focused, but in general this will pass unnoticed in practice. The bass driver is an 8 inch unit, high excursion, high rigidity pulp cone unit, designed in house for reflex (port) loading.

SOUND QUALITY

Despite being tall, and not exactly pocket size, the ElectroMotion is easily manhandled. Their narrowness is a factor of course, and so is the weight – each speaker tips the scales at a mere 16.1kg, and can be 'walked' into and out of the excellent packaging readily. Another factor here common to all MartinLogans is that the electrostatic panel is

protected by perforated panels. Visually, this renders them semi-transparent. They barely block light from rear windows, for example, which goes a long way to reducing the loudspeaker's visual bulk.

Another factor in the practicality equation is that the speaker has a claimed sensitivity of 91dB (in our test they came out at 87dB

rather than 91dB, but this means they on a par with many moving coil designs) and they are abstemious in their power demands. The way they deliver power, in particular their dryish bass delivery, and their unusual throw (common to many line source loudspeakers) means they appear to be more sensitive than the raw numbers suggest, and certainly more so than many moving coil speakers in the same price range.

It is true that impedance drops to around 1 Ohm at 20kHz, which is par for the course with MartinLogan electrostatics, but so little power is involved at this frequency that this has no practical implications – that has been my experience with this marque anyway. If it does with your choice of music you would need to fear for the long term health of your hearing. As the lab tests indicate, they don't need much, if any toe in, despite what the otherwise excellent instruction manual suggests. You can use the ElectroMotion with small pre power amps, or with a medium power integrated amplifiers or receivers – start your search at 50 Watts or so.

The one performance area that cannot be shortchanged however is sound quality. The ElectroMotion can sound bright and grubby if given half a chance with an unsympathetic choice of amplifier or source component.

Earlier MartinLogan models



tips can be removed to reveal carpet piercing spikes.

The ElectroMotion is a stereo loudspeaker pair, but as you would expect it can be supplied in a form suitable for multichannel applications by adding the EM-C2, a centre channel loudspeaker and the EM-FX2 surround sound speaker which are part of the same range. Of course, there are also subwoofers in the range, and although not strictly necessary much of the test was conducted with a recently introduced REL subwoofer – there's more on this under the sound quality crosshead.

MartinLogan speakers have always been well presented, but the materials didn't always suit their

were open to criticism on the grounds that the bass and the mid/top (the stomping ground for the ESL driver) was rarely completely at one. The ElectroMotion, which is MartinLogan's least expensive full range speaker, resolves this complaint almost completely. The worst you can say is that the lean quality of the mid and top is somehow mirrored in the performance of the bass driver. In fact the bass is quite well extended from the relatively small bass bins. Although not exactly muscular or meaty, it is reasonably well articulated, with realistic tonality and a meaningful sense of depth and weight, and a tuneful quality to match.

The real magic of the ElectroMotion however is higher up the band, the area generated by the electrostatic panel, where the speaker is fast, highly detailed and assured, and once again completely seamless. Even without stretching to more costly models in the range, this model is notable for its almost holographic stereo imagery and its presence.

Refinement is also part of the equation; tonal colours are explicit. And in common with many MartinLogans, the ElectroMotion is almost magical with human voice, as I quickly discovered with some well liked recordings of Mahler and Richard Strauss. I enjoyed the speaker with full throttle recordings (including a notable transmission from this year's Prom performance of Mahler's 'Resurrection', which I had previously attended on the night, played by the Simon Bolivar Youth Orchestra), but its real *métier* is chamber and small scale music making.

Some may want a little more weight than the basic vanilla speaker can provide, and for them a subwoofer would be an obvious addition. In

this case one of REL's new R series subwoofers added just the weight and authority that may be required in many systems, but without loss of articulation, or unwanted boxiness. I am not



suggesting that a subwoofer is necessary, merely that the speaker is good enough that it can be stretched even further with a well chosen subwoofer, even when partnering a two channel system, assuming careful setup.

CONCLUSION

It's hard not like a loudspeaker such as this. The things it does well, it does brilliantly, and they're a vital part of the musical transmission chain – tonal accuracy, spatial imaging, transient speed, microdynamics. The things it does less well – bass and outright dynamics – it still does well enough so as not to become a distraction. Earlier MartinLogans were obviously flawed in the lower regions, but the new ElectroMotion raises the game for a hybrid of this price. Overall then, the ElectroMotion is a superb and relatively affordable (in the context of high end, at least) new loudspeaker.

MEASURED PERFORMANCE

MartinLogan's electrostatic panel gives an even output from 400Hz to 18kHz, free from major peaks or dips, when measured on-axis. There is a small plateau lift in output around 1.5kHz and this will give the speaker a little extra presence. With electrostatics though this is usually less obvious and unpleasant than with other loudspeakers. Off axis the result was similar, except upper treble above 5kHz starts to fall away. The best result was just slightly off-axis by a few degrees so the loudspeakers can be pointed straight down a room, rather toed-in to point directly at listeners.

Output from the bass unit was in good balance with the electrostatic panel, the downward firing port taking over from the bass unit below 80Hz. It works smoothly down to 25Hz our red trace shows, imposing good acoustic damping upon the bass unit, seen both in the breadth of its acoustic output and in the wide dip around 36Hz in the impedance curve. Bass quality should be good and deep bass apparent at times.

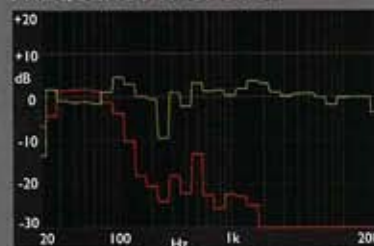
As electrostatics go, sensitivity was high, measuring 87dB from one nominal watt (2.8V) of input. The ElectroMotion doesn't need lots of power to go loud and around 60 Watts should be enough for most rooms. Our impedance curve shows impedance sinks to 1 Ohm at 20kHz, as it does with most electrostatics, and not all transistor amplifiers will be happy about this if strong treble exists in a recording and volume is high. Impedance measured 5.3 Ohms overall however, largely because the bass unit has a 4.7 Ohm D.C. resistance.

As expected an analysis of the

loudspeaker's decay spectrum over 200mS showed a very clean result, as expected from an electrostatic panel with no surrounding cabinet. Even the bass bin looked clean, in spite of small cabinet size. Bass distortion was very low at less than 1%, apart from a small peak around 40Hz where it reached 4%. The profiled port was unusually linear too, with just 4% distortion at 40Hz. The electrostatic panel also measured well over its operating range with distortion typically 0.1%, much lower than cone loudspeakers.

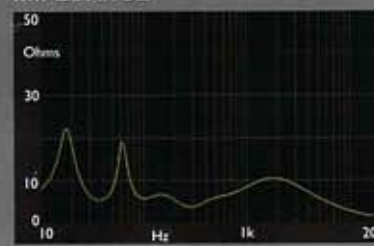
The ElectroMotion measured well in all areas. The bass cabinet in particular looks stronger than previous designs, better damped and likely less boomy as a result. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT

Superb affordable electrostatic hybrid with all the benefits and very few of the downsides.

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FOR

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- musicality
- soundstaging
- value

AGAINST

- needs decent front end